TMDS-FET470R1B1M IAR Kickstart Development Kit

Getting Started Guide

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1 Getting Started

This chapter provides installation and programming instructions for the starter kit TMDS-FET470R1B1M TMS470 IAR Kickstart Development Kit.

1.1 Kit Contents

- One TMDS-FET470R1B1M CD-ROM
- One TMDS-FET470R1B1M IAR Kickstart Development Board
- One TMDS-FET470R1B1M IAR Jlink USB-JTAG Debugger

1.2 Installing the Embedded Workbench KickStart-16

Exit all MS-Windows programs prior to loading this software.

The setup program installs all necessary files for running programs on the IAR KickStart Environment. The setup program adds the appropriate program group and icons to the Windows program manager. Included on this CD is a 16 Kbytes code-sized limited Embedded Workbench KickStart C/C++ compiler debugger.

1. To install it select **Install Software** and then select **KickStart Version**.

Note: If the program does not install automatically click the open file and this will begin the installation. This will start the installer (below).



Figure 1. Installer Start Screen

2. Click **Install the IAR Embedded Workbench** and follow the instructions in the installation application. If the files does not automatically open click open the file. We recommend that you use the default directories, and the **Full** installation option.
3. **Exit** the installer application.

1.3 Installing IAR J-Link-KS USB to JTAG Debugger

Before you start the Embedded Workbench it is a good idea to install the J-Link-KS USB to JTAG debugger.

Note: J-Link-KS is not compatible with Windows 98.

1. Plug the USB cable into the J-Link-KS.
   Important: Do not connect the J-Link-KS to the target PCB before this installation procedure is completed!
2. Connect the other end of the USB cable to the USB port on your PC. The green light on the J-Link-KS will start to blink indicating that J-Link-KS has not found a driver.
3. Your PC will search for a driver. This might take a few seconds. When it has located **New Hardware**, it will start the Install wizard.
4. Choose **Install from a specific location**
5. Click the **Browse** button and browse to the J-Link-KS directory. If you used the default directory they will be at: *C:\Program Files\IAR Systems\Embedded Workbench 4.0 Kickstart\ARM\drivers\Jlink*.

Note: WinXP shows a warning that the driver is not certified by Microsoft. Ignore this warning and click continue anyway.

6. Click **Finish**. Windows will tell you that everything is OK and the green light on J-Link-KS will stop

flashing. J-Link-KS is now installed.

1.4 Hardware Installation

1. With the J-Link-KS Connected to the PC. Connect the 20 conductor ribbon cable between the J-Link-KS and the target EVM.
2. Verify the jumper setting for J-Link-KS supplied power or connect a 6 – 9 VDC power supply to the EVM (not included) with a 5.5mmO.D. x 2.1mm I.D. connector.
3. Verify the jumper configuration with the **Descriptions of the jumpers on the TMS470R1B1M board** document named *TMS470B1M JumperDescriptions.pdf* on the supplied CD ROM, in the **Product_Info** directory.
4. Now you are ready to start the workbench and try an example program.

1.5 Starting the Embedded Workbench and Running the Demo Application

1. From the Start menu choose **Programs>IAR Systems>IAR Embedded Workbench for ARM>IAR Embedded Workbench**. The IAR Embedded Workbench for ARM will start.
2. Choose **Open existing workspace**.

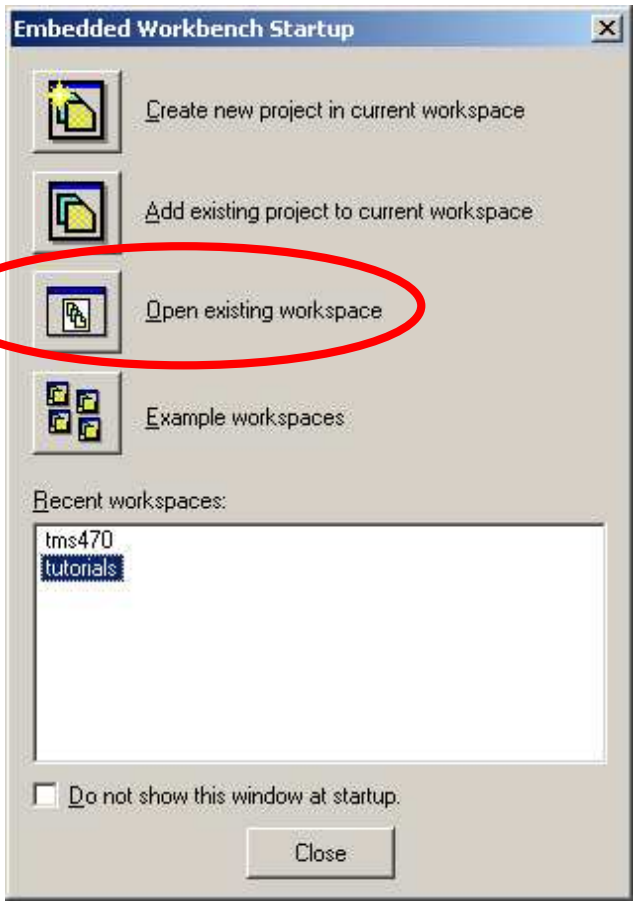


Figure 2. Embedded Workbench Screen

3. Navigate to the installation directory **\ARM\src\examples\TexasInstruments\TMS470R1B1M\FlashingLight** directory and open the **tms470.eww** workspace.

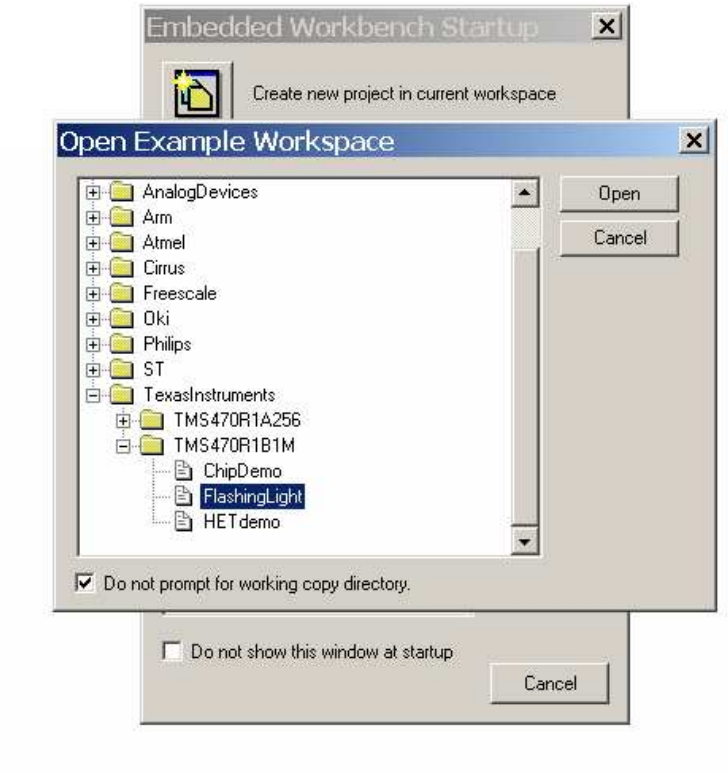


Figure 3. Open Example Workspace Screen

In the Workspace window, select **Flash** as the compilation target.

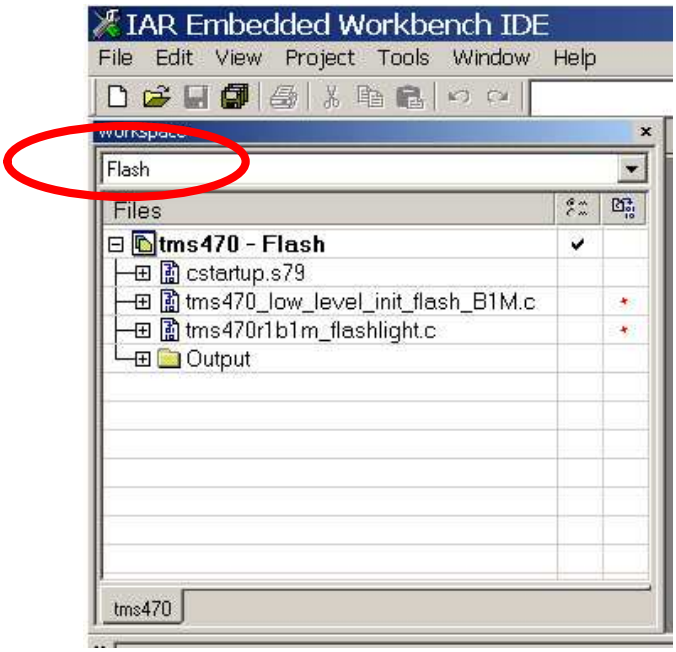


Figure 4. Workspace Window

Double clicking on any of the files in the list will open the editor window.

4. Click the C-SPY **Debug** button. This will automatically compile the project, if necessary, start C-SPY **Debug** and then download and Flash.

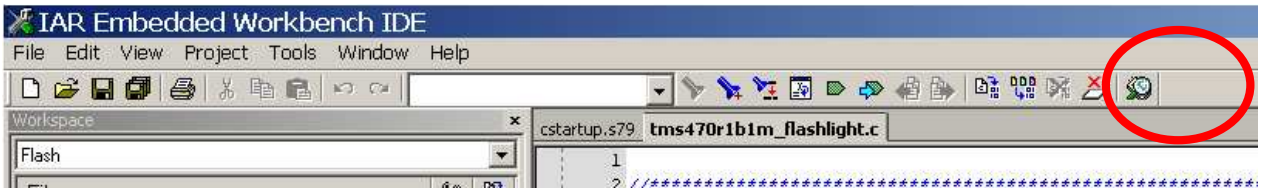


Figure 5. C-SPY Debug Button

5. Click on the **GO** button to start the program.

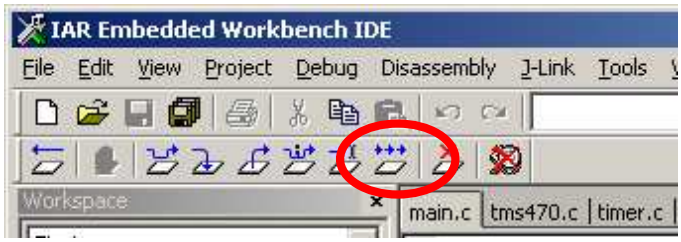


Figure 6. GO Button

6. The lights should now be blinking on the target board.
7. To stop the debugger click the **BREAK** button.



Figure 7. BREAK Button

8. To exit the debugger click the **EXIT** button.

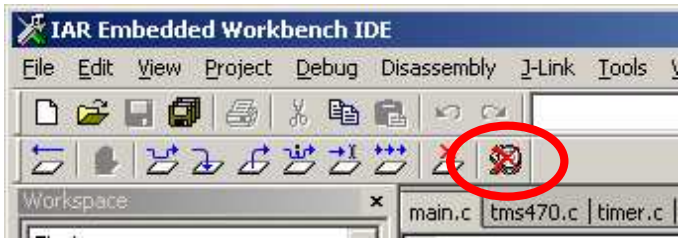


Figure 8. EXIT Button

Congratulations. You have just run your first Embedded Workbench for ARM application and debug session.

1.6 Documentation and Information

For more information, please see the user guides in PDF format in the installation directory *\ARM\doc* on the CD ROM.

Comprehensive and up-to-date documentation and information can be found on the Web at http://www.ti.com/tms470.

2 Helpful Hints

2.1 Setting up a new workbench

1. Start a new work space.
2. Add a new project. **Project>Create a New Project** Name and save it to you project directory.
3. Add the program files (or create a new program file then add it) **Project>Add a New File**.
   Example : main.c , tms470_cstartup.s79 and tms470_low_level_init.c
4. Select the project
5. Select options for the project. **Project>Options**.
6. Select the General Options Category and Confirm the **Target Window**.
   a. Select the **chip variant** in use, **ARM Mode**, **Big-Endian Mode**, and **4 bytes**.
7. Select the **Linker Category** and Confirm the Output Window.
   a. Select **Allow C-SPY specific extra output file**
8. Change to **Extra Output Window** and select **Generate extra output file**.
9. Change to **config Window** and select **Override default** for the Linker Command file.
10. Select the appropriate CMD file for part, RAM or Flash.
11. Select the **Debugger Category** and Confirm the Setup Window.
    a. Change **Driver**to **J-Link**.
    b. Change **Setup Macros** by checking the **Use Macro file** to the appropriate macro (Ram or Flash).
    c. Change to **Download Window** and select **Verify download** and if you are going to flash the part check the **Flash download**.
    d. Close the window and you are now ready to start.

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